

## CLAIMS

We claim:

1. A computer-readable medium having stored thereon a data structure for a type system, the data structure providing requested services on an artifact in the type system, the data structure comprising:
  - a) a base class for capturing common functionality of objects of the type system; and
  - b) at least one controller object, the controller object in communication with the base class, the at least one controller object validating the requested services based on a set of rules associated with a programming language.
2. The computer-readable medium of claim 1, wherein the artifact comprises one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event.
3. The computer-readable medium of claim 1, wherein the programming language comprises one of Visual Basic, C++, C#, and J#.
4. The computer-readable medium of claim 1, wherein the base class determines the at least one controller object to communicate with in order to validate the requested services.
5. The computer-readable medium of claim 1, wherein the data structure further comprises:
  - c) a first class providing a level of abstraction between a second class and a third class, the second class and the third class searchable by the first class.
6. The computer-readable medium of claim 5, wherein the second class and the third class comprise nested classes.

7. The computer-readable medium of claim 5, wherein the second class and the third class include nested namespaces.
8. The computer-readable medium of claim 1, wherein the data structure further comprises:
  - d) a container for storing types in the type system.
9. The computer-readable medium of claim 1, wherein the requested services comprise modifying the artifact in the type system.
10. The computer-readable medium of claim 1, wherein the requested services comprise creating a new artifact in the type system.
11. A method of modifying an artifact for use in a type system meta-model, the method comprising:
  - a) receiving a request from an application programming interface to modify an artifact in the type system meta-model;
  - b) in response to a) issuing at least one instruction to a language specific controller object, the language specific controller object validating the request based on rules associated with a programming language; and
  - c) in response to a validated request from the language specific controller, modifying the artifact.
12. The method of modifying an artifact for use in a type system meta-model of claim 11, wherein the method further comprises the step of:
  - d) transmitting a response to the application programming interface that the artifact has been modified.

13. The method of modifying an artifact for use in a type system meta-model of claim 11, wherein the artifact comprises one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event.
14. The method of modifying an artifact for use in a type system meta-model of claim 11, wherein the programming language comprises one of Visual Basic, C++, C#, and J#.
15. A method of creating an artifact for use in a type system meta-model, the method comprising:
  - a) receiving a request from an application programming interface to create an artifact in the type system meta-model;
  - b) in response to a) issuing at least one instruction to a language specific controller object, the language specific controller object validating the request based on rules associated with a programming language; and
  - c) in response to a validated request from the language specific controller, creating the artifact.
16. The method of creating an artifact for use in a type system meta-model of claim 15, wherein the method further comprises the step of:
  - d) transmitting a response to the application programming interface that the artifact has been created.
17. The method of creating an artifact for use in a type system meta-model of claim 15, wherein the artifact comprises one of a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event.
18. The method of creating an artifact for use in a type system meta-model of claim 15, wherein the programming language comprises one of Visual Basic, C++, C#, and J#.